

Sustainable Environments, Kant and Architectural Education: Reflections on an Intersection

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PROLOGUE

These quotations from Italo Calvino's *Invisible Cities* and the Lester Brown definition of sustainable societal practices set the stage for this exploration of a Kantian categorical imperative for integrating sustainable design concepts into architectural education:

Clarice, the glorious city, has a tormented history. Several times it decayed, then burgeoned again, always keeping the first Clarice as an unparalleled model of every splendor, compared to which the city's present state can only cause more sighs at every fading of the stars. ... And yet, almost nothing was lost of Clarice's former splendor; it was all there, merely arranged in a different order, no less appropriate to the inhabitants' needs than it had been before. ...

The city of Leonia refashions itself every day: every morning the people wake between fresh sheets, wash with just-unwrapped cakes of soap, wear brand-new clothing, take from the latest model refrigerator still unopened tins, listening to the last-minute jingles from the most up-to-date radio. ... On the sidewalks, encased in spotless plastic bags, the remains of yesterday's Leonia await the garbage truck. ... Nobody wonders where, each day, they carry their load of refuse. ... Leonia's rubbish little by little would invade the world, if, from beyond the final crest of its boundless rubbish heap, the street cleaners of other cities were not pressing, also pushing mountains of refuse in front of themselves. Perhaps the whole world, beyond Leonia's boundaries, is covered by craters of rubbish, each surrounding a metropolis in constant eruption.'

A sustainable society is one which satisfies its needs without diminishing the prospects of future generations.?

Are we headed toward Leonia or Clarice?

Are there architectural ethical positions to be taken and choices to be made in heading toward Leonia or Clarice?

Fabricating the landscape we inhabit – from huts to farmsteads, villages, towns and cities; from paths to roads and highways, to fiber-optic networks, and the rest of the infrastructure that supports settlement – is humankind's largest ongoing material enterprise. In contemporary society, environmental design professionals – architects, landscape architects, interior designers, planners and urban designers – are integral participants in that enterprise. Renewable resources (solar energy and its transformation) and the earth's reservoir of stored energy, fertile soil, water and raw materials, and natural and modified ecologies enable our survival and inhabitation. Our capacity to endure through time on earth is linked to the balance between those resources we use and deplete and those which can be

regenerated relative to our growing numbers and conceptions of what constitutes an acceptable quality of life on earth. The earth's seemingly boundless capacity and our technological inventions appear to move any horizon of endangerment to life from depletion past any foreseeable future. Nonetheless, legitimate concerns are being raised about the rate at which our demands for resources are growing and our capacity to stay ahead of a critical juncture beyond which irreversible desertification may begin.

Some schools of architecture and practicing architects are increasingly examining sustainable design concepts and technologies — through courses of study, increased research and its dissemination, changes in curricula, and through professional resources such as the American Institute of Architects' *Environmental Resource Guide*. Howard Itzkowitz's paper, "Categorical and Hypothetical Imperatives: Architectural Education vs. Sustainability,"³ addresses the thorny question of the seamless integration of sustainable design principles in the sense articulated by Lester Brown into the architectural design curriculum. His framing of "versus" is an indication of the polarities that exist.

This paper originated as a letter response to Itzkowitz. It argues the possibility that sustainable environmental design may be a categorical imperative in Kantian terms, leading to an ethical duty to integrate sustainable design concepts into the architectural curriculum.

CONTEXT: ENVIRONMENTAL LEGACY IN ARCHITECTURAL DESIGN AND A "VERSUS"

Consideration of the manner in which environmental context, climate and site situation inform architecture has a rich history. Vitruvius, in Book I, Chapters I and II, of the *Ten Books on Architecture*, directly addresses this:

The architect should also have a knowledge of the study of medicine on account of the questions of climates (in Greek *climata*), air, the healthiness and unhealthiness of sites and the use of different waters. ... Finally, propriety will be due to natural causes if, for example, in the case of all sacred precincts we select very healthy neighborhoods with suitable springs of water in the places where the fanes are to be built. ... There will also be natural propriety in using an eastern light for bedrooms and libraries, a western light in winter for baths and winter apartments, and a northern light for picture galleries and other places where a steady light is needed ...⁴

Book I, Chapter IV is dedicated to "The Site of a City" and in it he discusses selection of a "healthy site," and supports the concept with examples of how solar orientation, wind direction, marshes and site drainage, temperate climates, mediation of heat and balance of

fresh air, etc., contribute to well-being. And Chapter VI has a major section on the orientation of streets and alleys relative to wind.'

About 1600 years later in *The Four Books of Architecture* (1570) Andrea Palladio addresses site and building situations in the presentation his of villa and country estate projects. In Book II, Chapter XII titled "Of the SITE to be chosen for the fabricks of VILLA'S," he weaves together design intention, climate and site disposition. An example of his guidance from that chapter:

One ought not to build in valleys enclosed between mountains; because edifices in valleys are there hid, and are deprived of seeing at a distance, and of being seen. These are without dignity and grandure, and also entirely contrary to health; because the earth being impregnated by the rains that settle there, sends forth pestiferous vapours, infecting both the body and mind; ... and what is lodged in the granaries will corrupt through too great moisture. ... And when the winds enter the said valleys, it will be with too much fury, as if it were through narrow channels; and when they do not blow, the collected air will grow gross and unhealthy.⁶

Horatio Greenough, writing in 1843, after praising American shipbuilding design of sleek fast ships, remarks: "Here is the result of the study of man upon the great deep, where Nature spake of the laws of building, not in the feather and in the flower, but in the winds and waves, and he bent all his mind to hear and obey," and then turns to address the development of an American Architecture by referring to "site" and "climate":

... let us learn principles, not copy shapes; let us imitate them [Greek design principles] like men, and not ape them like monkeys. ... The adaptation of the forms and magnitude of structures to the climate they are exposed to, and the offices for which they are intended, teaches us to study our own varied wants in these respects. [Greenough inserts a footnote: "... for no architecture, and especially no domestic architecture, can ever be above reproach, until climate, the uses of the edifice, and the situation, are respected as leading considerations. ... Cooper's *Home as Found*, 1838]"⁷

Another 125 years brings us to Reyner Banham's *The Architecture of the Well-tempered Environment*. In that span, the industrialized nations' capacities to control malaria ridden swamps, the purification of drinking water and the disposition of sewage, the tempering of air for comfort, using technology and readily available relatively cheap energy, created an illusion that the environmental concerns of Vitruvius, Palladio and Greenough had been tamed. (An example of the expected amelioration of climate and environmental effects via technology is richly illustrated in the south facing fully glazed wall of LeCorbusier's Cité de Refuge [Salvation Army] of 1929-1933.⁸) After a brief discussion of Wright's Larkin Building (one of the earliest air-conditioned buildings) and Kahn's Richards Laboratory, whose powerful poetic forms and expression derive explicitly from the environmental and service systems of the buildings, Banham continues:

So shallow an interest in so profound a building (Larkin) was both inevitable and predictable however; the art of writing and expounding the history of architecture has been allowed — by default and academic inertia — to become narrowed to the point where almost its only interest outside the derivation of styles is haggling over the primacy of inventions in the field of structures.⁹

Banham describes his effort as a "tiny fraction" of what needs to be addressed in a topic that is virtually undiscussed in architectural history: the impact of environmental conditioning, passive and mechanical, on architecture.

Then came Ian McHarg's *Design With Nature*, which posited an entire design strategy based upon ecological site assessment; fol-

lowed in the '70s by the early efforts at solar energy design using collectors and trombe walls, etc.; an AIA national convention on 'Energy'; annual issues dedicated to the environment and energy efficient or sustainable design practices by *Progressive Architecture*; AIA environmental programs; and UN global conferences on the environment in the 1990's.

This is not only a Western tradition. *Yin/yang* and *feng shui* are a set of powerful ecologically driven organizing design principles much older than Vitruvius. The Imperial Palace in Beijing is a striking late example of several key issues for design in the temperate, but often harsh climate of China. Guidelines for site selection and building groupings paraphrased from various sources include:

Selection of a site to the south and southeast off the crest of protective hills on the north and northwest, which provide shelter from winter winds. Arrange groups of buildings in a "u" shaped courtyard opening to the south, reinforcing protection from the north and enabling them to capture the sun in winter and prevailing breezes from the southeast in summer. Wide eaves shelter the walls with shade and from rain run-off, and covered verandahs link the buildings along the inner side of the u-shaped courtyard, enabling communal action and passage in protection. Deciduous trees shade the courtyard in summer, open it to the sun in winter. The ground should slope to the south, with fresh water arriving from higher slopes and run-off and waste downslope, etc.¹⁰

On the contemporary scene we find proponents and critics of "sustainable design practices" (an expansion from environmentally and site responsive design strategies for healthy lives and expressive purposes to a larger construct of designing environments that are ecologically benign and ensure a global future), and its presentation as an ethics. On the "pro" side we find Pliny Fisk, III, "eco-design pioneer," director of the Center for Maximum Potential Building Systems"; Will McDonough, past Dean at the University of Virginia"; and James Wines of Site, who is quoted here:

... We are trying to give an aesthetic dimension to environmental issues by expressing technological functions. ... I'm challenging those awful buildings done by most of the "greenies." It's bad, uninteresting design. That's the point of the book: Philosophy, aesthetics and technology go together. ... While there is brilliant work being done today that qualifies as sustainable, most architects' choice of visual interpretation is still locked into time-warped 20th-century stylistic idioms ...¹³

On the "con" side we hear sentiments like these of Sylvia Lavin, chair of architecture and urban design at UCLA:

Of course, no one in their right mind is unsupportive of the environment. But she goes on to say that sustainable design has its roots in the ecology movement of the Sixties and is an ethos that masquerades as ethics. It is a design ideology that is being promulgated under rubric of ethical responsibility. ... And that's where I find the moralizing aspect starts to become dangerous in an academic context. ...¹⁴

Speaking as if architecture were an autonomous discipline, somehow unconnected to these issues she continues:

... schools should attempt to define "the responsibilities of an architecture student to the discipline of architecture, to maintain standards for the integrity of the discipline" and to help students acquire the mastery that will enable them to negotiate "between the capacities of architecture as a discipline and the needs of the larger social context."

Whatever architecture's "capacities" or the "needs of the larger social context," they do not seem to include the reciprocal conceptions of ecology, form, and metaphysical aspects of meaning of place

incorporated in Vitruvius, Palladio, and *yin/yang*. Despite the more or less continuing discussion, sustainable design has been a backwater in most architectural educational programs and in the overwhelming majority of architectural practices. A "versus" that Itzkowitz highlights.

HOWARD ITZKOWITZ: HYPOTHETICAL IMPERATIVES AND SUSTAINABLE DESIGN

Itzkowitz is concerned that environmental sustainability in the sense articulated by Lester Brown is treated at best as an elective ethical choice — a 'hypothetical imperative' in Kantian terms. He proposes that we need to move beyond the technological and political terms with which we address environmental sustainability.¹⁶ A path to fully integrating environmental sustainability issues within the architectural education curriculum through the studio is framed in two sections of his paper: "What then is the 'nature' of sustainable architecture?" (Itz, 212), and "Sustainability as Architecture: Restoring a Balance" (Itz, 212-17). He contends that architectural design studio resistance to meaningful incorporation of sustainable design values and concepts is problematic:

... the role of the architectural studio, where faculty often see sustainability as a technical subject subordinate to formal issues, has come into question. ... The discipline of Design, ... is at the heart of the studio because it is at the heart of the profession. What is needed is to understand and reveal the mutual dependence it shares with sustainability. (Itz, 210)

What I wish to question, with an eye to reinforcing Itzkowitz's argument regarding more integrative approaches, are his observations that "In Kantian terms morality is to do with human conduct rather than with outcomes of that conduct (Itz, 210), and that:

There is no unconditional moral obligation to produce sustainable architecture, only laws that dictate measurable energy conversion and waste disposal standards. There are pragmatic reasons for reducing costs of construction and maintenance, but their application is a matter of prudent engineering. Nor do there seem to be voluntary (hypothetical) imperatives for sustainability, that by force of reason, are universally accepted by the profession ..."(Itz, 211)

A KANTIAN ARGUMENT

If a case can be constructed that moves sustainable design from the realm of the hypothetical imperative to that of the categorical, the impact of Itzkowitz's position that we need to shift from technological solutions to integrative and poetic solutions within architecture (and, by extension, the other environmental design disciplines) has compelling force.

To begin the argument for a categorical imperative, the following outlines the logical implications of sustainable and non-sustainable environmental design practices:

- A1 Humankind is dependent upon the sun and the earth's continued productivity of renewable and stored resources for continued life.
- A2 To act in a way that is not sustainable depletes the earth's capacity to support life, our own as well as that of other persons and the global ecology.
- A3 The ultimate outcome of a depletion process would be the desertification of the earth and death and extinction for humankind, possibly the current population included, depending upon the time frame and negative impact of such actions.
- A4 Any social project — that of technological advance, control of the growth of population, a geo-political resolution of valuation and compensation for resources, etc. — is provisional and possible but not guaranteed to be absolute in outcome toward

remedying the effects of desertification.

- A5 Therefore, even though there may be short-term convenient results from acting toward the design and construction of the inhabited environment in non-sustainable ways, particularly for those currently empowered by wealth, ultimately, logic reveals the possible extinction of humankind.
- A6 Thus, even though there may be a remedy available if action proceeded quickly enough, it is logically necessary to act as if remedies may not be forthcoming in order to ensure continuation of ourselves and others, if only long enough for the development of technological processes to ensure survival.

Kant distinguishes between "categorical" and "hypothetical" imperatives. The latter refer to actions taken with respect to desired outcomes. For example, the technical skill exists whereby we can reduce energy consumption in buildings. Thus, a case could be made that we ought to exercise that skill in our actions, because reducing energy consumption appears to be a reasonable provisional good. This would be a hypothetical imperative of the first order, that of "skill." Let us go further, and speculate that we may run out of stored fossil fuel. If we did, we may not have an alternative energy supply in place, or at least, it may take a long time to develop an alternative. Thus, we could choose to design buildings and urban communities in order to be conserving with regard to fossil fuel consumption. This would constitute a hypothetical imperative of the second order, that of "prudence."¹⁷ Both of these ethical perspectives regarding hypothetical imperatives, that of *skill*, "the technical (belonging to art)" and that of *prudence*, "the pragmatic (to welfare)" (Abbott's emphasis), can be applied to the juncture of environmental sustainability and architecture. However, they leave the pursuit of sustainable design frameworks in a personal choice limbo, not categorically imperative. In Lavin's terms noted earlier, they are merely one of several competing elective form-giving ideologies.

Kant begins his discussion of the categorical imperative "Finally there is an imperative which commands a certain conduct immediately, without having as its condition any other purpose to be attained by it. This imperative is Categorical. It concerns not the matter of the action, or its intended result, but its form and the principle of which it is itself a result; and what is essentially good in it consists in the mental disposition, let the consequence be what it may" (A, 234; E, 26). He moves on to frame the necessities of moral action in additional terms. "There is therefore but one categorical imperative, namely thus: *Act only on that maxim whereby thou canst at the same time will that it should become a universal law*" (A, 236; E, 30). In other words, any moral action we undertake must have logically consistent results, when universally applied, without undermining its premise.

Next is the premise that "man and generally any rational being exist as an end in himself, *not merely as a means* to be arbitrarily used by this or that will, but in all his actions, whether they concern himself or other rational beings, must be always regarded at the same time as an end" (A, 239; E, 35). He continues "The practical imperative would be as follows: *So as to act to treat humanity, whether in thine own person or in that of any other, in every case as an end withal, never as a means only*" (A, 240; E, 36). He follows with consideration of those duties toward ourselves and others that are "necessary" and/or "contingent (meritorious)" (A, 240; E, 36-7). This is far too brief an introduction to one of the sets of moral behavior propositions that has shone through the last two centuries, been debated and attacked and yet, retains convincing impact; but I think it is a sufficient basis from which to return to environmental sustainability:

- A1 Actions that we undertake that would lead to suicide, death and extinction are breaches of fundamental duty, towards both ourselves and others. This is not a contingent or hypothetical concern; life is an end in itself, an *a priori* position. Continued life, both personal and for others (the continuation of the species) is a primary good for humanity, "the idea of humanity" being "an

end it in itself' (Abbott's emphasis, 240).

- A2 Non-sustainable environmental design practices can be shown to lead to desertification of the earth and the extinction of life — ours and that of others — despite interventionist proposals that may possibly mitigate the situation at some future time.
- A3 Therefore, non-sustainable environmental design is a breach of fundamental ethical duty to self and others — it being a "duty to maintain one's life" (227), and by extension "life" generally; cannot be considered a universal law because of its logical inconsistency; does not accept all humanity and rational beings as ends (some may perish or be "held down" supporting the profligate living standards of others), and thus must be rejected.
- A4 The obverse becomes the categorical imperative for moral action, to act, to design the environment in a sustainable manner, however unknown the particular methods and means.

While it is true that Kant is a deontologist, predicating ethics and moral action from reasoning and *a priori* premises of what *ought to be done*, it is not strictly true that consequences are not considered. They *are not* insofar as means are directed toward objects or conditions of desire; they *are* insofar outcomes from an ethical choice can be reasoned to be logically consistent or inconsistent with regard to a categorical premise — for us, the primary condition of existence. Given the risk to life, the proposition that there is no categorical imperative to design in sustainable ways is not a supportable position. The implication for architectural education is clear: conceptions of sustainability *ought to be* intrinsic to design education. Itzkowitz's proposed path, to break down the technopolitical framework and to imbue sustainable design with poetic potential from within architectural design is given categorical rather than hypothetical ethical force. Why is this important?

IMPLICATIONS FOR ARCHITECTURAL EDUCATION

The intuitive scientific optimism of Buckminster Fuller's *Operating Manual for Spaceship Earth* has come and gone. So, too, have the warnings of the Club of Rome's *Limits to Growth*: along with the oil embargo (a breakdown in geopolitical systemic control over oil); and the American Institute of Architects' *Energy Program* of the early 1980's. When Lake Erie nearly died, Canada and the U.S. got together and with a combination of technology and government mandate, cleaned it up. When a hole in the ozone layer appeared, a big share of the world got together to stop using fluorocarbons. When there was too much air-pollution, the U.S. called for more fuel efficient cleaner cars (without changing transportation or settlement policies). People do not believe there is an environmental crisis; they believe if and when one occurs, we will resolve it through technology and inter-governmental cooperation; ecological failures have not as yet been irreversible; we have time to address the problems: acting otherwise is too expensive, etc.

This circumstance, the technopolitical one Itzkowitz references — utilizing hypothetical imperatives of skill and prudence, and technologically resolving problems as they arise — leads to a complacency toward, or worse yet, a marginalization of sustainable environmental design as interesting and idiosyncratic, part of a crusade. The shifting balance of population relative to global capacity, the imbalances regarding resource utilization and waste production, imbalances with regard to monetary wealth and quality of life, etc., are still avoidable by most people in the U.S.

For example, four members of the architecture faculty at Iowa State University live within eight blocks of each other on the *same street* in Des Moines. We independently commute 80 miles round trip daily to Ames because our schedules do not match well. Settlement patterns are spread out. There are no public transporta-

tion options. Gas remains cheap. What would it take for us to change our patterns? \$5 per gallon gasoline? \$10 per gallon gasoline? I commute in a modest, fuel efficient automobile that cost almost \$20,000. A value exceeding by 10 to 20 times the annual income of a substantial share if not a majority of the world's families. Who is going to work on these imbalances? Quite surely for the foreseeable future, my colleagues and I are not going to leave our automobiles home, nor are we going to forego the resource-rich lives we lead. Nor will those departing this ACSA national conference via jet planes.

The fact that we have been successful in the technopolitical sense is the greatest barrier to perceiving the importance of the categorical imperative with regard to sustainable environmental design practice. We still live in an era where Utility benefit-cost based ethical philosophy is relied upon to balance the interests of present convenience against those of the future with respect to the use of global resources. The path to evaluation of long- and short-term environmental options, the relative costs of each (in human and other capital and happiness), the ratio of environmental degradation risk undertaken in relation to expectations of technological progress and remedies, all fit into the cost-benefit Utilitarian calculus. Even if social contract concepts such as those of John Rawls are invoked, however those who are most and least advantaged nations or people may be defined in the global circumstance within which environmental sustainability is played out,¹⁸ various outcomes regarding risk and the total good can be evaluated in terms of who and how many persons are affected, what qualitative levels of human life are maintained, through what period of time, and which choice will impact one most (or least), etc. At best these options may be Kantian hypothetical imperatives of skill and prudence.

The argument attempted here is that sustainable design is not a hypothetical but a categorical imperative. The path to working on the issue is necessitated by ethical duty. The implications for architecture, landscape architecture, planning and public policy regarding human settlement and development are manifold and substantive. There are several directly applicable possibilities to invigorate architectural education with sustainable design values:

- Δ1 Site, climate and ecological context could be studied in the design studio with respect to basic influences on architectural form in a manner that parallels structural influences on form.
- Δ2 Building materials and assemblies courses could change focus from basic conventional systems to those that may be reusable or that use recycled material, or that are energy conserving in their creation, in their assembly, and/or in their energy effectiveness once in place.
- Δ3 The material and constructional properties of such assemblies and their influence on form could be a part of studio work.
- Δ4 History and theory courses could examine ecologically benign architecture and design ideologies that extend beyond the formal and traditional Western canon, broadening student understanding of precedent.
- Δ5 Studio project programs may be issued that address settlement patterns and location choices as part of the problem.

None of these suggestions leads to a totalizing reductive "energy-based" mentality or to particular architectural imagery. None precludes the aspirational ideals that we hold for a poetic and meaningful environment. But they would deflect the values by which we analyze, conceive and judge architecture — from the elemental level, to that of the building, and to the larger communal landscape. The position is simply put: architects need to understand that architectural decisions are not neutral with respect to global resources and inhabitability, and that they require ethical choice supported by mastery of sustainable design concepts as part of the larger architectural discipline.

NOTES

- ¹ Italo Calvino, *Invisible Cities*, trans. W. Weaver (San Diego: Harcourt Brace Jovanovich, Publishers, 1972, pbk.), Cities and Names 4, Clarice, 106-7; Continuous Cities 1, Leonia, 114-5.
- ² Lester Brown, Founder and President, Worldwatch Institute, cited by Howard Itzkowitz in "Categorical and Hypothetical Imperatives: Architectural Education vs. Sustainability," in *CounterBalance*, ed. R. Gomez-Moriana, S. Shanley, & T. Walker, Conference Proceedings, ACSA West Central Region, Oct. 3-5, 1997, at Winnipeg (Winnipeg, Canada: University of Manitoba, 1997), p. 210.
Howard Itzkowitz, "Categorical and Hypothetical Imperatives: Architectural Education vs. Sustainability," in *CounterBalance*, op. cit., Note 2, pp. 210-129.
- ⁴ Vitruvius, *The Ten Books on Architecture*, trans. Morris Hicky Morgan, (Cambridge: Harvard University Press, 1914); reprint New York: Dover Publications, 1960. Book I, Chap. I "The Education of the Architect," 10, and Chapt. II "The Fundamental Principles of Architecture," p. 15.
Vitruvius, Bk. I, Ch. IV, 17-21, Bk.I, Ch. VI, 24-31.
- ⁶ Andrea Palladio, *The Four Books of Architecture*, trans. & pub. Isaac Ware, 1738 (London; facsimile reprint New York: Dover, 1965).
- ⁷ Horatio Greenough, *Form and Function: Remarks on Art, Design and Architecture*, ed. Harold A. Small, introduction by Erle Loran (Berkeley: University of California Press, 1947 & 1966), pp. 65, 66.
- ⁸ Moshen Mostafav and David Leatherbarrow, *On Weathering: The Life of Buildings in Time* (Cambridge, Mass.: The MIT Press, c. 1993). Discussion of the original design, construction changes, and the *ad hoc* invention of and addition of the *brise-soleil*, pp. 27-31.
Laurence G. Liu, *Chinese Architecture*, New York: Rizzoli, c. 1989., Chap. II and III, *passim*, and Yu, Zhuoyun, *Palaces of the Forbidden City*, Translated by Ng Mau-Sang, Chan Sinwai and Puwen Lee, consultant editor, Graham Hutt. New York: The Viking Press and London: Allen Lane, 1984, 26-29, first published in Chinese, *Tzu Chin Ch'eng Kung Tien*, Hong Kong: Commercial Press Ltd., 1982.
- ¹⁰ Reyner Banham, *The Architecture of the Well-tempered Environment* (Chicago: University of Chicago Press, 1969), pp. 12-18
- ¹¹ For a brief introduction to Fisk, see *Architecture* (June 1998), Interview, 55.
- ¹² For a brief introduction see McDonough, "Design, Ecology, Ethics and the Making of Things," "The Hanover Principles," in Kate Nesbitt, ed., *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-95* (New York: Princeton Architectural Press, c. 1996), pp. 398-410. For a perspective on the impact of McDonough's views at Virginia, see *Metropolis*, (Oct. 1997): 120-121.
- ¹³ *Architecture* (May 1998), Interview, 77.
- ¹⁴ *Metropolis* (Oct. 1997), Elizabeth Schmidt, "Teaching Ethics," 121. In an otherwise engaging essay "The Avant-Garde Is Not a Home: Richard Neutra and the American Psychologizing of Modernity," exploring another major thread of the architectural thought: metaphysical and psychological values in architecture, Lavin initiates the article with an attack on what she characterizes as Reyner Banham's "rather exclusive and almost obsessive attention to bathrooms and mechanical systems" and his dismissiveness toward "all elements other than pure mechanical pragmatics as unnecessary to the production of architecture."; in R. E. Somol, ed., *Autonomy and Ideology: Positioning an Avant-Garde in America*, proceedings of the Conference "Autonomy and Ideology: Positioning an Architectural Avant-Carde in America, 1923-1949," New York, February 1-3, 1996, (New York: The Monacelli Press, 1997), p. 182.
- ¹⁵ *Metropolis*, 121.
- ¹⁶ Itzkowitz, op.cit., in this section "Sustainability as Technopolitics: Out of Balance," pp. 210-211. The parenthetical references "(Itz, 210)" indicate the Itzkowitz paper and page citation.
- ¹⁷ Immanuel Kant, "The Fundamental Principles of the Metaphysics of Morals" (selections), trans. Thomas K. Abbot (1889), in *Ethics and the Search for Values*, ed. Luis E. Navia and E. Kelly, (Buffalo: Prometheus Books, 1980), pp. 222-244; citation pp. 233-4; pp. 25-6 in Ellington. The recent James W. Ellington translation *Grounding for the Metaphysics of Morals* (Indianapolis/Cambridge: Hackett Publishing, 3rd ed., 1993, pbk.) has been reviewed and compared to Abbott. The Abbott Text has been quoted in this paper. The parenthetical references "(A,234; E,26)" refer to the pages of the Abbott and Ellington translations.
- ¹⁸ Utilitarianism holds that moral choices ought to be made in favor of options that maximize benefits in a given situation. Rawls proposes a hypothetical decision framework of fairness and justice based upon a "veil of ignorance" with respect to personal advantages in an ethical choice situation. For a concise discussion of Rawls' position see James P. Sterba, "Toulmin to Rawls," 406-418, in *Ethics in the History of Western Philosophy*, ed. Robert J. Cavalier, James Gouinlock and James P. Sterba (New York: Saint Martin's Press, 1989). Both theories have had wide impact in environmental policy, particularly in planning and urban design.